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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,224	10/08/2003	Lars Gustaf Liljeryd	4441-0110P	4049
2292	7590	10/18/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			LUGO, DAVID B	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/680,224	LILJERYD ET AL.	
	Examiner	Art Unit	
	David B. Lugo	2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 08 October 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) _____ is/are rejected.
- 7) Claim(s) 1-5 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 08 October 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. 09/230,799.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>10/8/03, 9/16/04</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The reference cited on the information disclosure statement (IDS) submitted on 9/16/04 has been crossed off since it was already cited on the IDS submitted on 10/8/03.

Claim Objections

2. Claims 1-5 are objected to because of the following informalities:

- a. Claim 1, line 5, “length A” should be --length N--.
- b. Claim 1, line 18, “ $p'_0(n)$ ” should be -- $p'_0(n)$ --.
- c. In claim 1, the variable “k” is listed in lines 5 and 18 using different definitions.

It is suggested that the occurrences of “k” in the equation of line 17 and in line 18 be changed to --k’--.

- d. Claim 2, line 1, it is suggested that “multiplying of said phase angles” be changed to --multiplying said phase angles--.
- e. Claim 2, line 2, it is suggested that “selecting of the real part” be changed to --selecting said real parts--.
- f. Claim 2, line 3, it is suggested that term “writing” be replaced with an alternate term such as --representing-- because it is unclear whether the ordinary meaning of the term writing is what is actually taking place in the method and intended to be claimed.
- g. Claim 2, line 13, it is suggested that “whereby reducing computation complexity” be changed to –whereby computational complexity is reduced--.
- h. Claim 3, line 4, it is suggested that “said multiplication” be changed to --said multiplying--.

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- i. Claim 5, line 4, “ $p_0(n)$ ” should be -- $p_0(n)$ --.
- j. Claim 5, line 17, “ K ” should be -- K' --
- k. Claim 5, line 17, “ $p'_0(n)$ ” should be -- $p'_0(n)$ --.
- l. Claim 5, line 17, “ N ” should be -- N' --.
- m. In claim 5, the variable “ k ” is listed in lines 4 and 17 using two different definitions. It is suggested that the occurrences of “ k ” in the equation of line 16 and in line 17 be changed to -- k' --.

Appropriate correction is required.

Allowable Subject Matter

- 3. Claims 1-5 would be allowable if rewritten or amended to overcome the objections set forth in this Office action.
- 4. The following is a statement of reasons for the indication of allowable subject matter:

Hong et al. U.S. Patent 5,127,054 provide a reconstructed speech signal constructed from a limited spectral representation of a voice signal and a harmonic signal therefrom using two filterbanks. Nguyen U.S. Patent 5,436,940 discloses filter banks for audio signal coding. However, the prior art of record fails to disclose an apparatus and method for providing a transposed signal where an input signal is filtered through a parallel bank of L filters, the outputs of which are downsampled to produce complex-valued subband signals, phase-angles of the complex-valued subband signals are multiplied by M , a subset of the real parts of the product are upsampled and filtered with a parallel bank of L' filters, which are added to the input signal to produce the transposed signal, where the impulse responses of the filter banks are shown in both of claims 1 and 5.

Conclusion

5. This application is in condition for allowance except for the formal matters described above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David B. Lugo** whose telephone number is **(571) 272-3043**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Jay Patel**, can be reached at **(571) 272-2988**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dl

10/15/04

M. Manantran
KHAI TRAN
PRIMARY EXAMINER *10/18/04*